PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 387978007WO0	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/US04/20338	International filing date *(day/month/year)* 24 June 2004 (24.06.2004)	Priority date *(day/month/year)* 25 June 2003 (25.06.2003)
International Patent Classification (IPC) or national classification and IPC IPC(7): A61K 7/06, 6/00, 31/56 and US Cl.: 424/401, 70.1, 74, 195.1; 514/729, 880, 182		
Applicant GERON CORPERATION		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
   a. ☐ *(sent to the applicant and to the International Bureau)* a total of 4 sheets, as follows:
      ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) _____ , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

☒	Box No. I	Basis of the report
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
12 July 2005 (12.07.2005)	28 September 2005 (28.09.2005)
Name and mailing address of the IPEA/ US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-8300	Authorized officer David Vanik Telephone No. (571) 272-3104

Form PCT/IPEA/409 (cover sheet)(April 2005)

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US04/20338

Box No. I Basis of the report

1. With regard to the **language**, this report is based on:
   - ☒ the international application in the language in which it was filed.
   - ☐ a translation of the international application into English, which is the language of a translation furnished for the purposes of:
     - ☐ international search (under Rules 12.3 and 23.1(b))
     - ☐ publication of the international application (under Rule 12.4(a))
     - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
   - ☐ the international application as originally filed/furnished
   - ☒ the description:
     pages 1-46 as originally filed/furnished
     pages* NONE received by this Authority on
     pages* NONE received by this Authority on
   - ☒ the claims:
     pages NONE as originally filed/furnished
     pages* NONE as amended (together with any statement) under Article 19
     pages* 47-50 received by this Authority on 12 July 2005 (12.07.2005)
     pages* NONE received by this Authority on
   - ☒ the drawings:
     pages 1/8 - 8/8 as originally filed/furnished
     pages* NONE received by this Authority on
     pages* NONE received by this Authority on
   - ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☒ The amendments have resulted in the cancellation of:
   - ☐ the description, pages
   - ☒ the claims, Nos. 25-32
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing (*specify*):
   - ☐ any table(s) related to the sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing (*specify*):
   - ☐ any table(s) related to the sequence listing (*specify*):

** If item 4 applies, some or all of those sheets may be marked "superseded."*

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US04/20338

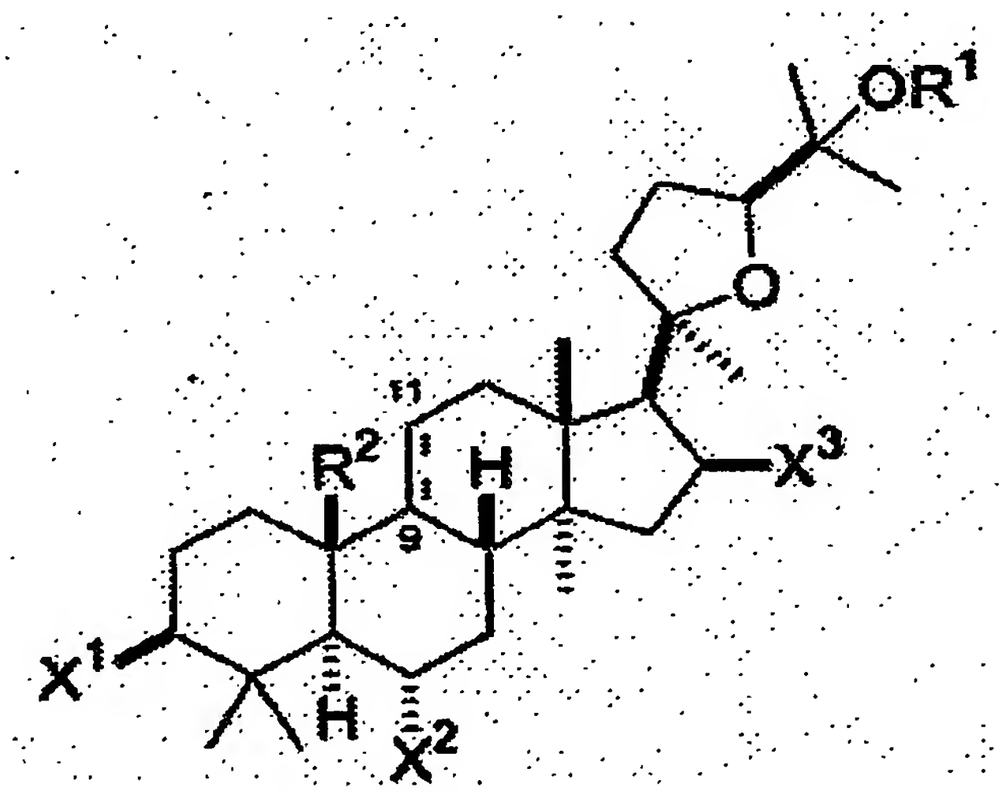
Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 1-24	YES
	Claims NONE	NO
Inventive Step (IS)	Claims 1-24	YES
	Claims NONE	NO
Industrial Applicability (IA)	Claims 1-24	YES
	Claims NONE	NO

2. Citations and Explanations (Rule 70.7)

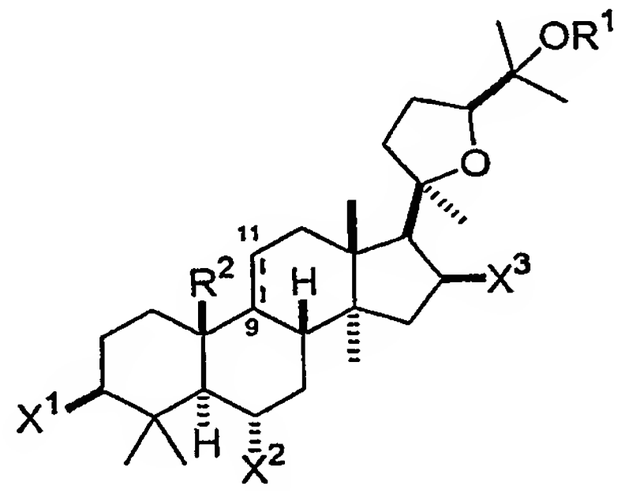
Claims 1-24 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the following a method for conditioning the skin comprising applying the below structure together with an emulsifier, surfactant, thickener, lubricant, preservative, antioxidant, and antimicrobial agent.



Claims 1 -24 meet the criteria set out in PCT Article 33(4), and thus contain industrial applicability because the subject matter claimed can be made or used in industry.

CLAIMS

1. A method for conditioning the skin, comprising: applying topically to the skin a formulation comprising a compound of formula **I**:



I

where:

each of X^1, X^2, and X^3 is independently selected from hydroxy, lower alkoxy, lower acyloxy, keto, and a glycoside;

OR^1 is selected from hydroxy, lower alkoxy, lower acyloxy, and a glycoside;

wherein any of the hydroxyl groups on said glycoside may be substituted with a further glycoside, lower alkyl, or lower acyl, such that the compound includes a maximum of three glycosides; and

R^2 is methyl and ---- represents a double bond between carbons 9 and 11; or, R^2 forms, together with carbon 9, a fused cyclopropyl ring, and ---- represents a single bond between carbons 9 and 11;

and wherein said formulation further comprises an ingredient selected from the group consisting of an emulsifier, a surfactant, a thickener, a skin emollient, and a lubricant, and an ingredient selected from the group consisting of a preservative, an antioxidant, and an antimicrobial agent.

2. The method of claim 1, wherein said compound includes zero, one, or two glycosides, none of which is substituted with a further glycoside.

3. The method of claim 2, wherein said compound includes zero or two glycosides, none of which is substituted with a further glycoside.

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4. The method of claim 1, wherein each said glycoside, when present, is of the D configuration.

5. The method of claim 1, wherein R^2 forms, together with carbon 9, a fused cyclopropyl ring; and ---- represents a single bond between carbons 9 and 11.

6. The method of claim 2, wherein each of X^1 and X^2 is independently selected from hydroxy, lower alkoxy, lower acyloxy, and a glycoside, and X^3 is selected from hydroxy, lower alkoxy, lower acyloxy, keto, and a glycoside.

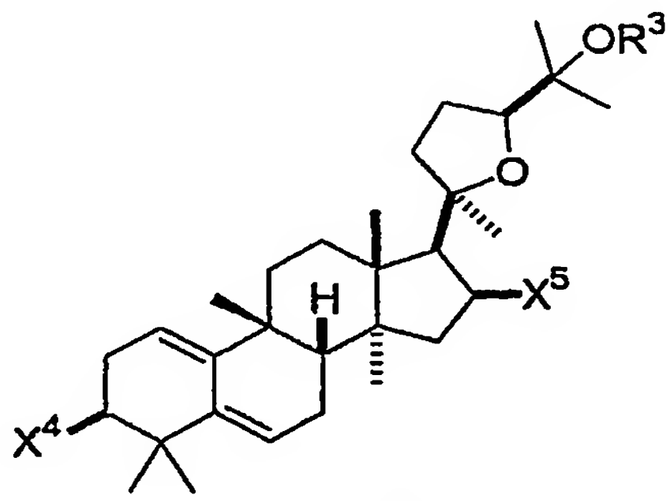
7. The method of claim 2, wherein X^1 is OH or a glycoside, each of X^2 and OR^1 is independently OH or a glycoside, and X^3 is OH or keto.

8. The method of claim 2, wherein the compound is selected from astragaloside IV, cycloastragenol, astragenol, astragaloside IV 16-one, cycloastragenol 6-β-D-glucopyranoside, and cycloastragenol 3-β-D-xylopyranoside.

9. The method of claim 8, wherein the compound is selected from astragaloside IV, cycloastragenol, astragenol, and astragaloside IV 16-one.

10. The method of claim 9, wherein said compound is astragaloside IV.

11. A method for conditioning the skin, comprising: applying topically to the skin a formulation comprising a compound of formula II:



II

where:

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each of X^4 and X^5 is independently selected from hydroxy, lower alkoxy, lower acyloxy, keto, and a glycoside, and

OR^3 is selected from hydroxy, lower alkoxy, lower acyloxy, and a glycoside,

wherein any of the hydroxyl groups on said glycoside may be substituted with a further glycoside, lower alkyl, or lower acyl, such that the compound includes a maximum of three glycosides.

12. The method of claim 11, wherein said compound includes zero, one, or two glycosides, none of which is substituted with a further glycoside.

13. The method of claim 11, wherein each said glycoside, when present, is of the D configuration.

14. The method of claim 12, wherein each of X^4 and OR^3 is selected from hydroxy, lower alkoxy, lower acyloxy, and a glycoside, and X^5 is selected from hydroxy, lower alkoxy, lower acyloxy, and keto (=O).

15. The method of claim 12, wherein X^4 is OH or a glycoside, and each of X^5 and OR^3 is OH.

16. The method of claim 15, wherein X^4 is OH.

17. The method of claim 1 or 11, wherein the concentration of said compound in said formulation is from 0.01 to 5% (w/v).

18. The method of claim 17, wherein said concentration is from 0.01 to 1% (w/v).

19. The method of claim 1 or 11, wherein the concentration of said compound in said formulation is greater than 0.005% and less than 0.1% (w/v).

20. The method of claim 1 or 11, wherein the formulation further comprises one or more additional ingredients selected from the group consisting of an emulsifier, a thickener, and a skin emollient.

AMENDED SHEET

21. The method of claim 20, wherein the formulation comprises one or more ingredients selected from an emulsifier and a skin emollient.

22. The method of claim 21, wherein the formulation comprises a skin emollient.

23. The method of claim 1 or 11, wherein the biological activity of said compound is such that a composition containing the compound at a concentration of 1 μg/ml or less is effective to produce a telomerase activity at least 25% greater than observed in a vehicle control, as measured in a TRAP assay of keratinocyte or fibroblast cells.

24. The method of claim 1 or 11, wherein the biological activity of said compound is such that a composition containing the compound at a concentration of 1 μg/ml or less is effective to produce an amount of cell reconfluence in a scratch assay of keratinocytes which is at least 25% greater than that seen in untreated or other control cells.

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